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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,147	08/27/2003	Todd O. Bolken	03-0040.1	5050
22823	7590	09/30/2005		
STEPHEN A GRATTON THE LAW OFFICE OF STEVE GRATTON 2764 SOUTH BRAUN WAY LAKEWOOD, CO 80228			EXAMINER NOVACEK, CHRISTY L	
			ART UNIT	PAPER NUMBER
			2822	

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/649,147

Applicant(s)

BOLKEN ET AL.

Examiner

Christy L. Novacek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 51-95 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 55-95 is/are allowed.
- 6) ☒ Claim(s) 51-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This office action is in response to the amendment filed July 13, 2005.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 51, 52 and 54 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakayama et al. (US 6,621,172).

Regarding claim 51, Nakayama discloses providing a substrate (70) having a plurality of first and second interconnect contacts (72), attaching a first die (50) to the substrate in electrical communication with the first interconnect contacts, encapsulating the first die in a first encapsulant (74) having a planar surface on the first die such that at least one feature (74/76) on the planar surface of the encapsulant facilitates bonding to the first encapsulant, attaching a second die (60) to the surface of the first encapsulant and to the feature such that it is in electrical communication with the second interconnect contacts, and forming a second encapsulant (90) on the second die and on the first encapsulant (Fig. 3; col. 6, ln. 36 – col. 12, ln. 14).

Regarding claim 52, Nakayama discloses that the first encapsulant includes molding and the feature includes a molded feature.

Regarding claim 54, Nakayama discloses that the feature includes a molded ridge.

Claims 51 and 53 are rejected under 35 U.S.C. 102(e) as being anticipated by Horiuchi et al. (US 6,731,010).

Regarding claim 51, Horiuchi discloses providing a substrate (23) having a plurality of first and second interconnect contacts, attaching a first die (25) to the substrate in electrical communication with the first interconnect contacts, encapsulating the first die in a first encapsulant (37) having a planar surface on the first die such that at least one feature (52) on the planar surface of the encapsulant facilitates bonding to the first encapsulant, attaching a second die (55) to the surface of the first encapsulant and to the feature such that it is in electrical communication with the second interconnect contacts, and forming a second encapsulant (27) on the second die and on the first encapsulant (Fig. 4, 9A-9E; col. 10, ln. 30 – col. 11, ln. 67).

Regarding claim 53, Horiuchi discloses that the feature (52) is a layer of material applied to the surface (col. 10, ln. 57-63).

Response to Arguments

Applicant's arguments filed July 13, 2005 have been fully considered but they are not persuasive.

Regarding the rejection of claim 51 as anticipated by Nakayama and Horiuchi, Applicant argues that Nakayama and Horiuchi allegedly fail to teach that the first encapsulant (74/37) encapsulates the first die. It appears as though Applicant is interpreting the limitation of “encapsulating” as meaning that the die is completely surrounded by the encapsulant. However, in Applicant's drawings, the first encapsulant is clearly shown as having contact with only the top and sides of the first die; the entire bottom surface of the die is not surrounded by any encapsulant. The Examiner is not going to give limitations in Applicant's claims a narrower interpretation than Applicant has provided in their own specification. Therefore, the Examiner is

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not going to limit the interpretation of “encapsulating”, as recited in Applicant’s claims, as meaning that the first die must be completely surrounded by encapsulant.

Further regarding the rejection of claim 51 as anticipated by Nakayama and Horiuchi, Applicant argues that Nakayama and Horiuchi allegedly “does not have a surface on the die 50, as presently claimed in amended claim 51.” As recited in claim 51, the first encapsulant is required only to include a planar surface on the first die. Nakayama shows in Figure 3 that the first encapsulant (74) has a planar surface (as the bottom surface of the second die has a planar surface). Horiuchi shows in Figure 9D that the first encapsulant (37) has a planar surface on the first die.

Further regarding the rejection of claim 51 as anticipated by Nakayama and Horiuchi, Applicant argues that Nakayama and Horiuchi allegedly fail to teach that the feature to facilitate bonding (adhesive 76/ adhesive 52) is not formed on the planar surface of the first encapsulant. However, Figure 3 of Nakayama shows that the planar surface of the first encapsulant (74) includes the feature (76) thereon that facilitates bonding to the first encapsulant. Figure 9D of Horiuchi shows that the adhesive (52) is formed upon the planar surface of the first encapsulant (37) to facilitate bonding to the first encapsulant.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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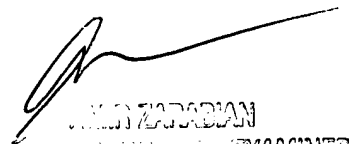
the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christy L. Novacek whose telephone number is (571) 272-1839. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CLN
September 27, 2005



AMIR ZARABIAN
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